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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/837,020      | 04/18/2001  | Yasushi Kohno        | TKA0028             | 7531             |

832 7590 09/30/2002

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SUITE 800  
FORT WAYNE, IN 46802

EXAMINER

VALENTI, ANDREA M

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

3643

DATE MAILED: 09/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

09/837,020

Applicant(s)

KOHNO ET AL.

Examiner

Andrea M. Valenti

Art Unit

3643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 July 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

PETER M. POON  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600

*fmf*

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

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***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,701,700 to Kohno et al in view of *Population Viability Analysis for the Oyster Plant (Mertensia maritime) in the Oslofjord Region* by Skarpaas.

Regarding Claim 1, Kohno et al teaches a method of encapsulating one plant seed or a plurality of plant seeds in an aqueous gel capsule (Kohno Col. 1 line 10-20); refrigerating the plant seeds under the condition that the plant seeds do not germinate (Kohno Col. 4 line 39); and sowing the plant seeds (Kohno Col. 1 line 21-25 and Col. 3 line 27-36). Kohno et al does not explicitly state that the method prevents defective germination or growth of a plant. However, it is notoriously old and well-known in the art of plant husbandry that cold breaks seed dormancy and provides for a more uniform and enhanced germination. Skarpaas teaches that a cold period is necessary to break seed dormancy and that prolonged cold treatment enhances germination (Skarpaas abstract second sentence of second paragraph). Therefore, it would have been obvious to one of ordinary skill in the art to modify the storage duration through routine tests and experimentation to a length that enhances germination as taught by Skarpaas.

Regarding Claim 13, Kohno as modified inherently teaches refrigerating the encapsulated plant seed at a temperature of about 15°C or lower (Col. 3 lines 28-36)

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and for a sufficient period of time to improve the germination of the encapsulated plant seed as compared to non-refrigerated encapsulated plant seeds.

Regarding Claim 2, Kohno as modified does not explicitly identify the plant seed size. However, it would have been obvious to one of ordinary skill in the art to apply the teachings of Kohno to a seed equal to or less than 1 mm for the enhanced germination effects taught by Kohno et al since applicant provides no criticality in the specification for the size and it is old and notoriously well-known to coat tobacco seeds with a seed coat.

Regarding Claims 3 and 4, Kohno et al as modified is silent on the refrigeration being carried out in a dark place. However, it is old and well-known in the art of plant husbandry that seeds possess germination and dormancy characteristics dependent on their genetic nature and germination occurs under specific environmental conditions such as light requirements. Some seeds require light and some seeds require darkness to germinate. It would have been obvious to one of ordinary skill in the art to conduct the seed storage method of Kohno et al in a dark place since a radish seed is a light germinator and it is necessary to store the seed in a dark place to prevent early germination and to increase the success rate of the plant.

Regarding Claims 5 and 6, Kohno et al as modified teaches the plant seed is a seed of a light germinator (Kohno et al Col. 4 line 25).

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Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,701,700 to Kohno et al as applied to claim 1 above, and further in view of U.S. Patent No. 5,525,131 to Asano.

Regarding Claims 7-12, Kohno et al as modified is silent that the plant seed encapsulated in an aqueous gel capsule is a pelletized seed. However, Asano teaches that it is old and well-known in the art of plant husbandry to pelletize a seed (Asano Col. 1 line 15-21). It would have been obvious to one of ordinary skill in the art to apply the gel coating of Kohno et al to the pelletized seed of Asano for the mechanized and economical distribution of the seeds in the field (Asano Col. 1 lines 14-18).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

Examiner maintains that applicant's broad claim language does not distinguish it over the teachings of the prior art. Examiner disagrees with applicant's argument that the pelletized seed would dissolve during preservation, since Asano teaches exposure to ambient conditions and ambient conditions inherently fluctuate between hot and cold and thus exposing the seed to cold temperatures without any adverse effects (Col. 2 line 26).

Examiner would like to bring applicant's attention to additional cited references that teach it is notoriously old and well-known in the art that cold breaks seed dormancy:

U.S. Patent No. 6,331,504 B1 teaches that germination is temperature and seed specific (Col. 1 lines 17-55);

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Abstract [<http://www.oikos.ekol.lu.se/Oikos.95.3.abstracts/11173skarpaas.htm>]  
by Skarpaas, third sentence prolonged cold treatment enhanced germination;

Effect of Scarification, GA and chilling on the germination of goldenrain-tree  
(Koeleria paniculata Laxm.) seeds, Rehman, Kyungpook National University, South  
Africa, 16 December 1999, 6 pages, abstract third sentence;

The Angelgrove Tree Seed Company, Basic Guidelines & Tips for Germinating  
Seeds, 9 pages [<http://trees-seeds.com/seed.html>] page 2 first paragraph.


### **Conclusion**

Any inquiry concerning this communication or earlier communications from the  
examiner should be directed to Andrea M. Valenti whose telephone number is 703-305-  
3010. The examiner can normally be reached on 7:30am-5pm M-F; Alternating Fridays  
Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's  
supervisor, Peter M. Poon can be reached on 703-308-2574. The fax phone numbers  
for the organization where this application or proceeding is assigned are 703-306-4195  
for regular communications and 703-305-0285 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or  
proceeding should be directed to the receptionist whose telephone number is 703-308-  
4357.

AMV  
September 24, 2002

  
PETER M. POON  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3800